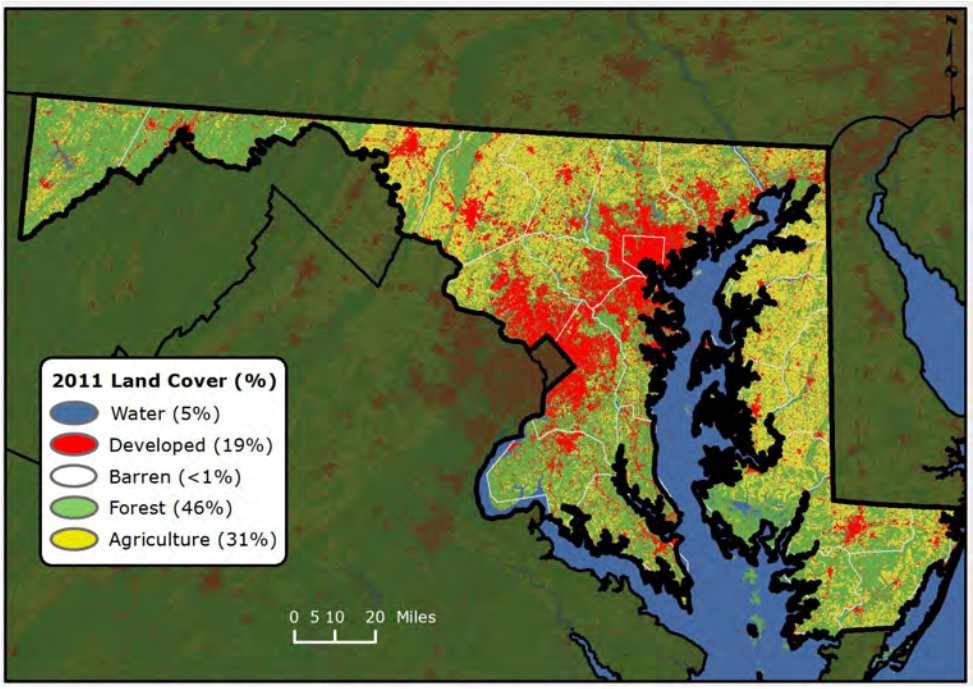
USDA United States Department of Agriculture

2015 Forest Health highlights

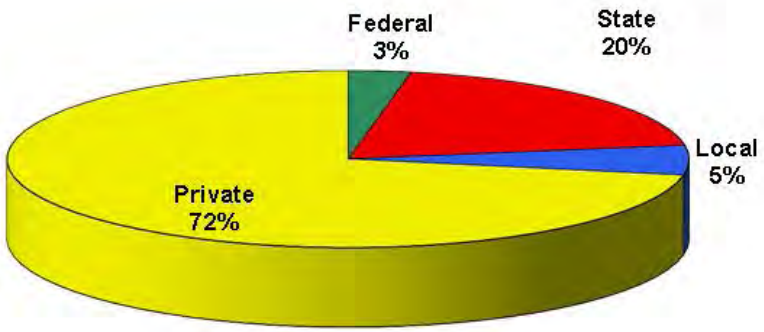
MARYLAND

Forest Resource Summary

Maryland occupies a land area of 6,264,876 acres. Forest land comprises 2,709,062 acres, of which 72 percent is privately owned. Healthy, productive forests are critical in urban and rural areas for soil conservation, clean air and water, wildlife habitat, outdoor recreation, and aesthetics. The forest products industry is the largest employer in Allegany and Garrett Counties and the second largest employer on the Eastern Shore.



Forest Land Ownership in Maryland, 2012

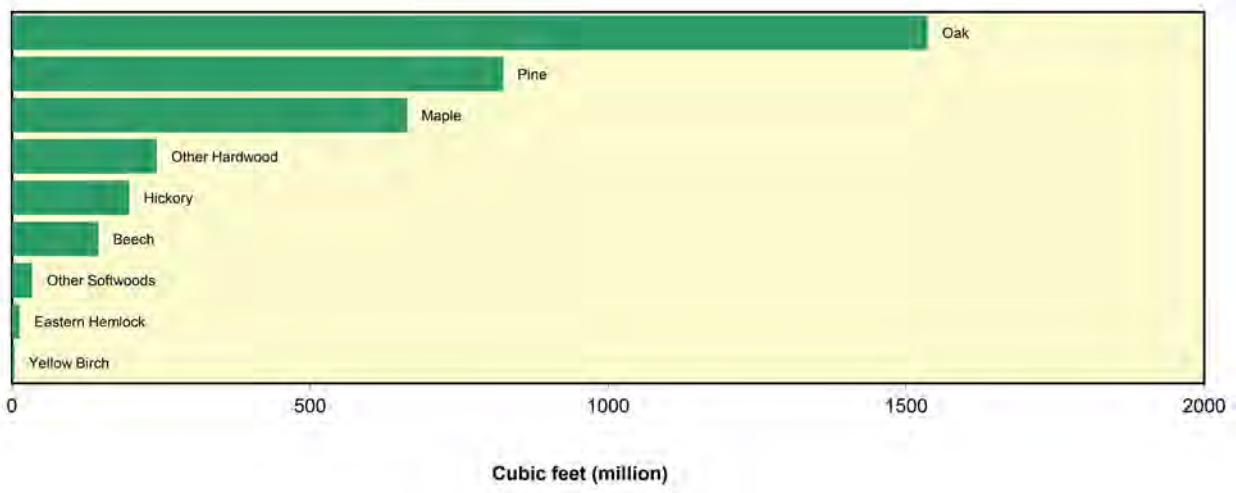


Forest Service
Northeastern Area
State and Private Forestry

Maryland Department of Natural Resources

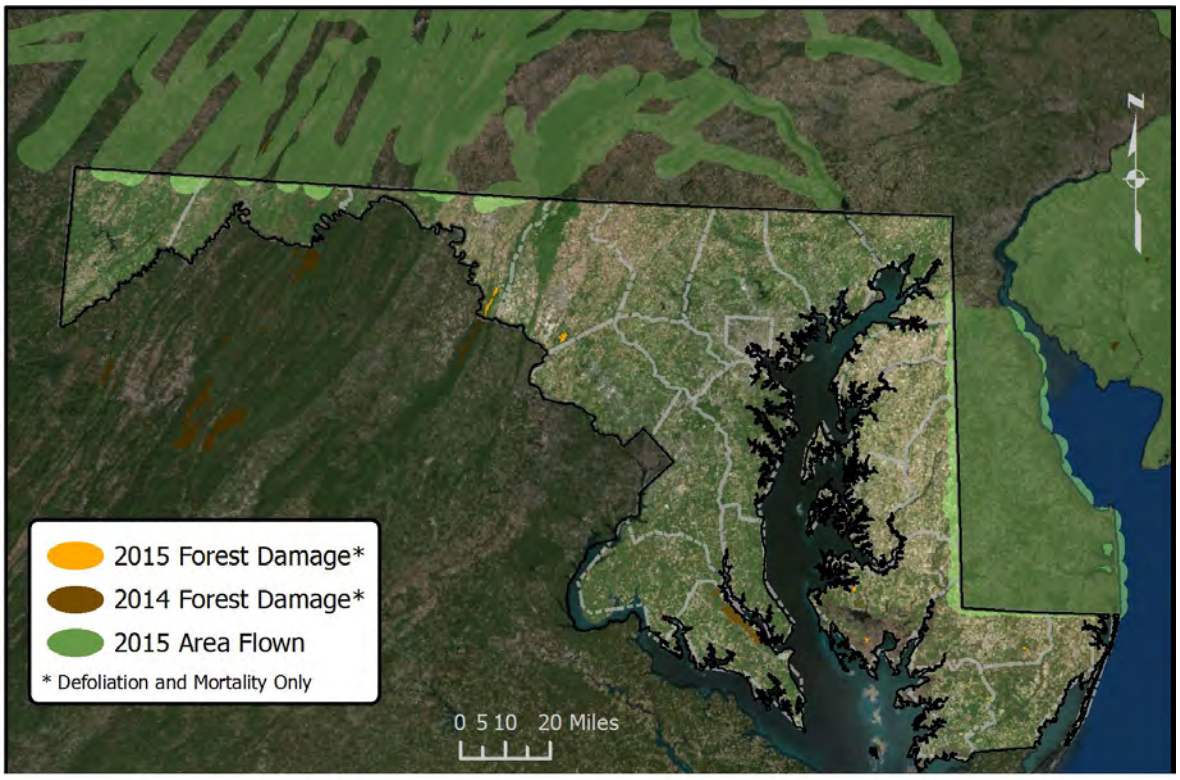
April 2016

Net Volume of Growing Stock on Timberland by Species in Maryland, 2012

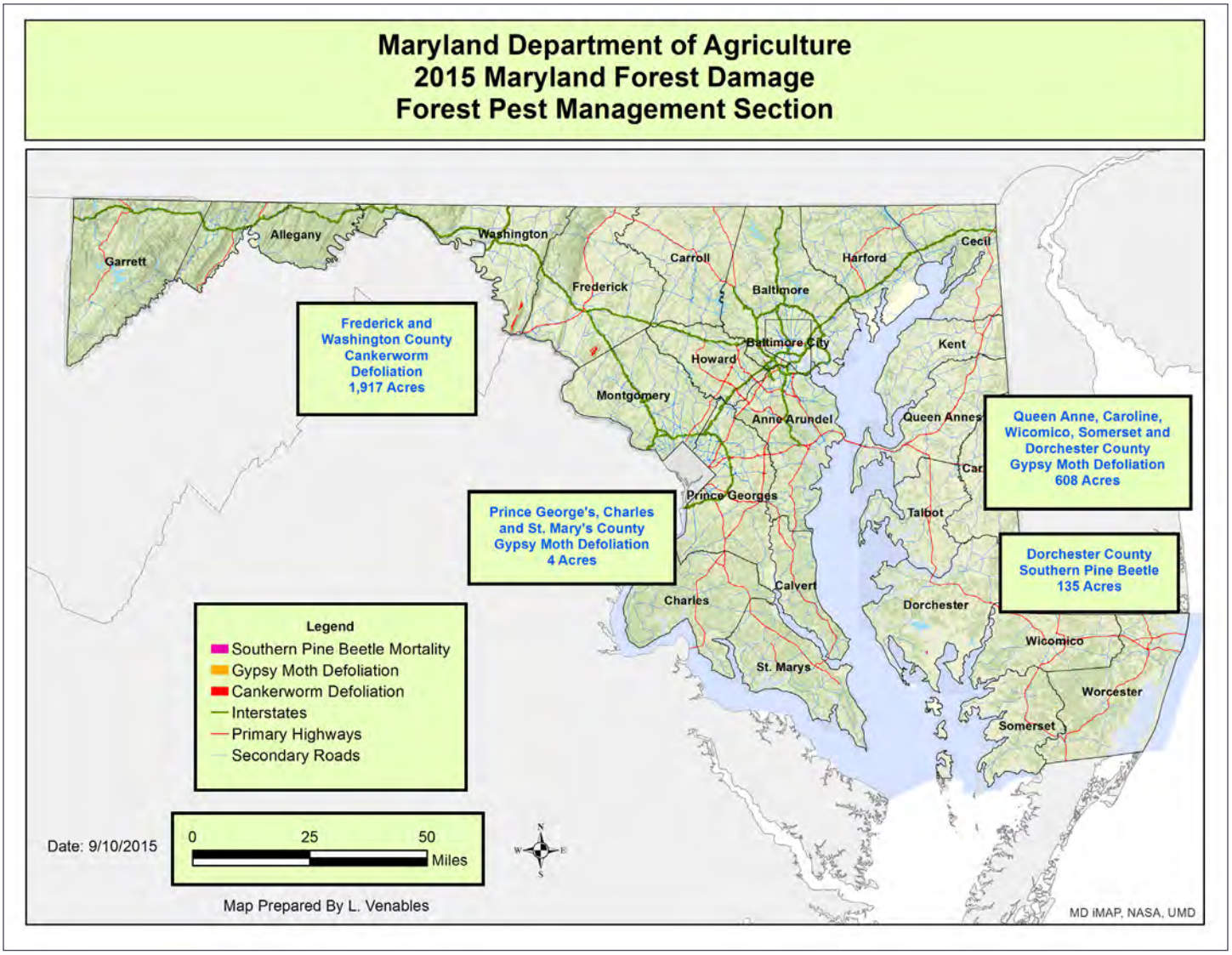


Forest Health Surveys

Maryland forest health is surveyed by both aerial flights and on the ground. In 2015, a native species of fall cankerworm defoliated 1,917 acres of hardwoods in Frederick and Washington Counties. Gypsy moth defoliated 612 acres of oaks, and southern pine beetle killed 135 acres of loblolly pine in Dorchester County.



Forest health survey observations in Maryland in 2014 and 2015.

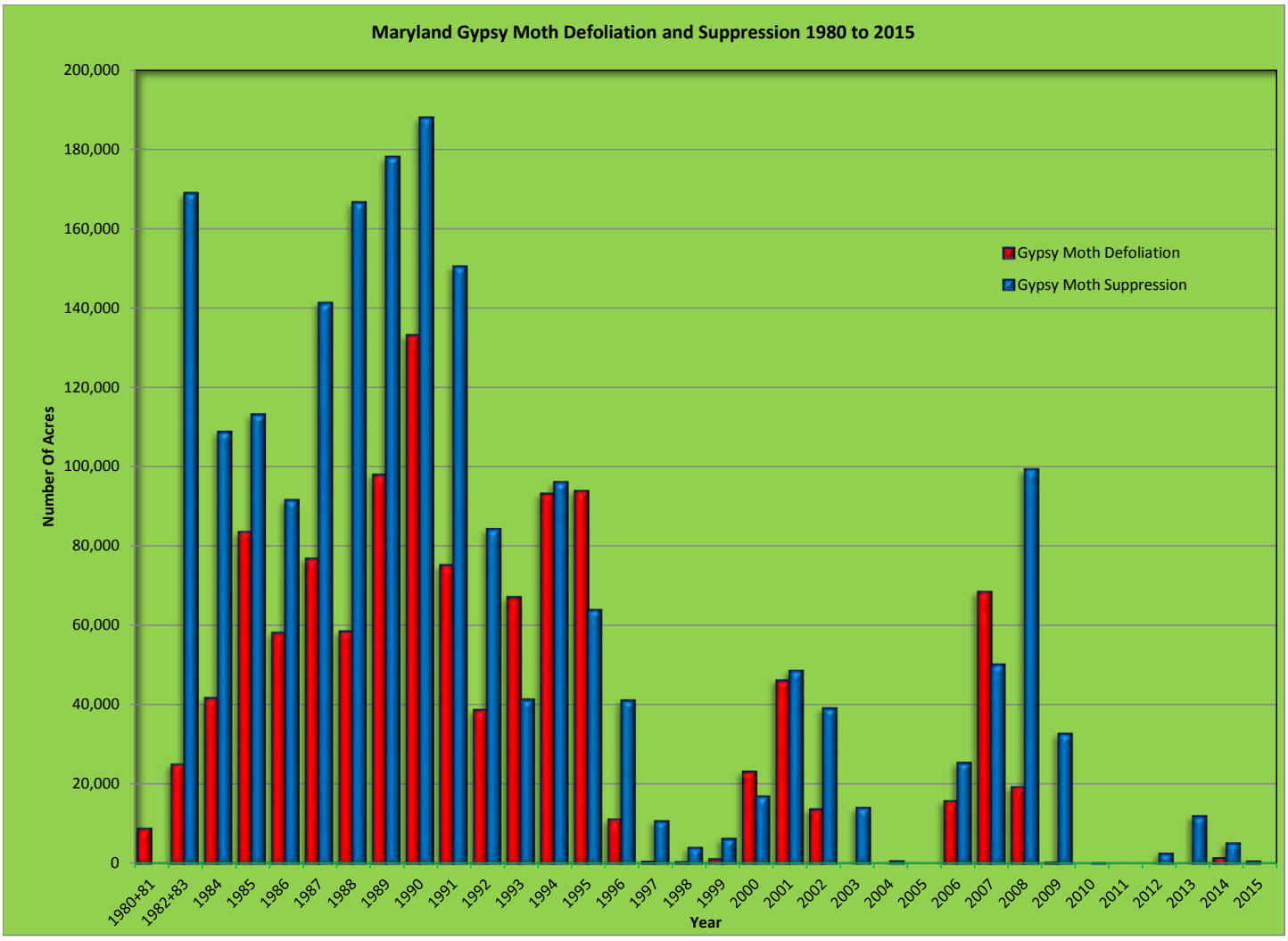


Maryland Department of Agriculture 2015 forest damage.

Forest Pest Issues

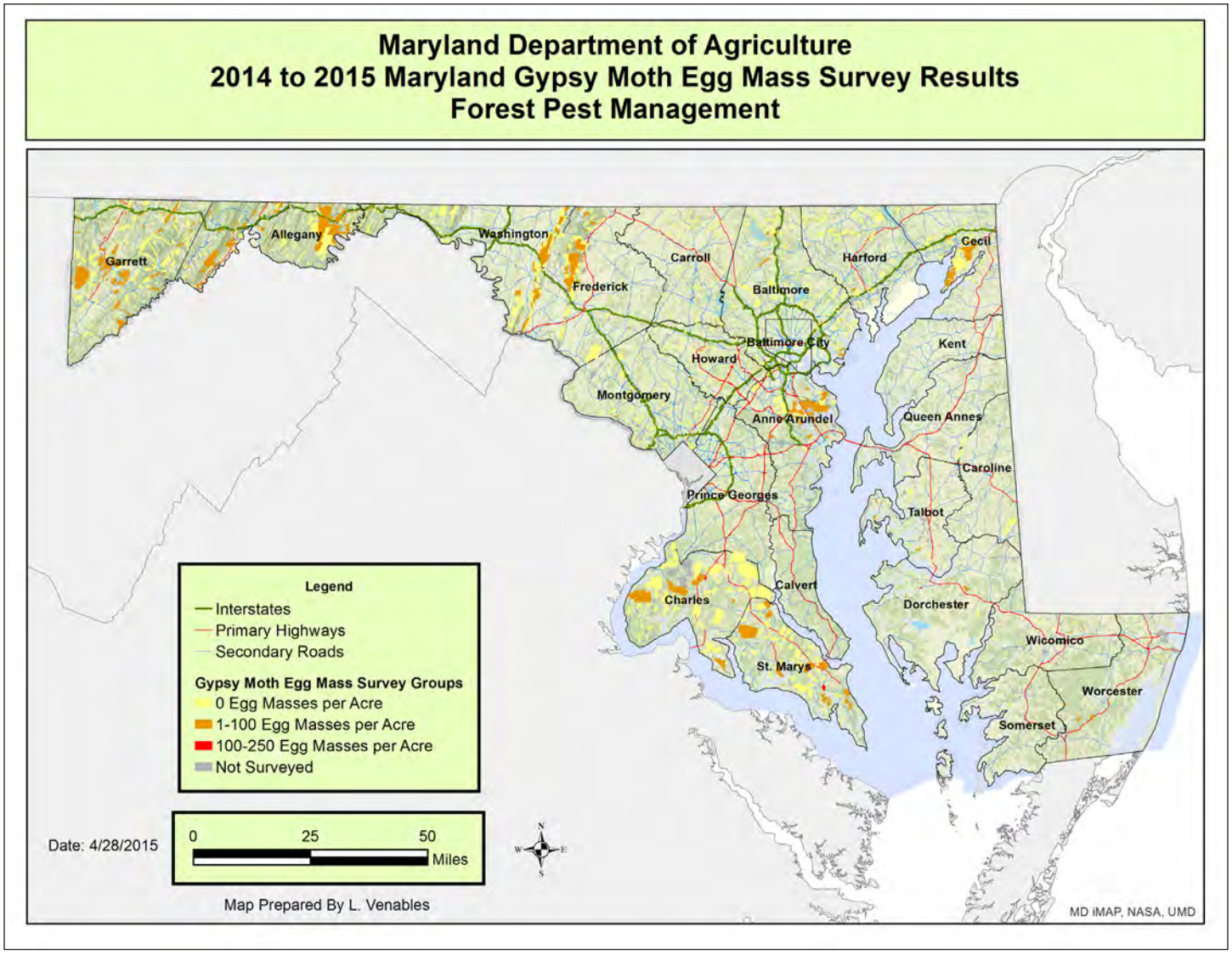
Gypsy Moth

The gypsy moth is the most serious threat to oak forests in the United States. The first eggs were detected in Maryland in 1971, and the first extensive defoliation occurred in 1981. Each fall and winter, the Maryland Department of Agriculture (MDA) conducts an extensive survey for gypsy moth egg masses to determine potential areas of defoliation. From August 2014 through March 2015, MDA Forest Pest Management personnel conducted gypsy moth egg mass surveys on 500,254 acres of "high-value" forested lands. "High-value" forested sites include areas with development, recreational use, managed forest and wildlife resources, and other site conditions that render dieback and mortality economically and socially important. The survey results indicated that current gypsy moth populations caused no moderate to heavy defoliation of high-value rural and urban forests in 2015.



Maryland gypsy moth defoliation and suppression from 1980 to 2015.

This map depicts the results of gypsy moth egg mass surveys.



MDA 2014 to 2015 gypsy moth egg mass survey results.

Hemlock Woolly Adelgid

Hemlock woolly adelgid (HWA) remains the major threat to the health of eastern hemlock. Infested hemlocks occur in the metropolitan area between Baltimore and Washington and in natural stands from Harford to Garrett Counties. *Laricobius nigrinis*, a predatory beetle of HWA, has been released in several areas since 2004.

Maryland Department of Agriculture
Forest Pest Management
Maryland Hemlock Woolly Adelgid Predator Releases 2003 - 2015

Hemlock Stand	County	Number Released	Species Released
Rocky Gap State Park	Allegany	3476	*Laricobius nigrinus*
Prettyboy Reservoir	Baltimore	2672	*Laricobius nigrinus*
Cunningham Falls State Park	Frederick	451	*Laricobius nigrinus*
Frederick City Watershed	Frederick	2381	*Laricobius nigrinus*
Broad Creek Scout Camp	Harford	2302	*Laricobius nigrinus*
Rocks State Park	Harford	1424	*Laricobius nigrinus*
Hagerstown Watershed	Washington	853	*Laricobius nigrinus*
Big Run (Savage River State Forest)	Garrett	685	*Laricobius nigrinus*
Big Run State Park	Garrett	1050	*Laricobius nigrinus*
Dry Run (Savage River State Forest)	Garrett	150	*Laricobius nigrinus*
Frostburg Watershed	Garrett	300	*Laricobius nigrinus*
Laurel Run (Potomac State Forest)	Garrett	1000	*Laricobius nigrinus*
Lostland Run (Potomac State Forest)	Garrett	1500	*Laricobius nigrinus*
Poplar Lick (Savage River State Forest)	Garrett	1616	*Laricobius nigrinus*
Poplar Lick (Savage River State Forest)	Garrett	1510	*Laricobius osakensis*
Total		**21370**	

Maryland Department of Agriculture
Forest Pest Management
Maryland Hemlock Woolly Adelgid Predator Releases Fall 2014 to Spring 2015

Hemlock Stand	County	Number Released	Species Released
Rocks State Park	Harford	309	*Laricobius nigrinus*
Poplar Lick (Savage River State Forest)	Garrett	510	*Laricobius osakensis*
Total		**819**	

Hemlock Woolly Adelgid Suppression

A joint task force of MDA and Maryland Department of Natural Resources personnel addressed the multidisciplinary needs of the HWA infestation. The task force prioritized more than 50 hemlock stands and selected them as the sites where suppression might be attempted. Only publicly owned sites would be part of this suppression project.

Maryland Department of Agriculture
Forest Pest Management
Fall 2014 to Spring 2015 Imidacloprid Treatments for
Hemlock Woolly Adelgid Control in Maryland

		Trunk Injection	Trunk Injection	Soil Injection	Soil Injection	Total	Total
Hemlock Stand	**County**	**#Trees**	**Inches DBH***	**# Trees**	**Inches DBH***	**#Trees**	**Inches DBH***
Prettyboy Reservoir	Baltimore	0	0	707	5746	707	5,746
Fair Hill NRMA	Cecil	48	449	57	436	105	885
Catoctin Creek	Frederick	36	525	17	136	53	661
Cranesville Swamp**	Garrett	225	2510	345	3814	570	6,324
Deep Creek Lake State Park**	Garrett	18	287	0	0	18	287
Frostburg Watershed	Garrett	124	1096	178	1837	302	2,933
Herrington Manor State Park	Garrett	0	0	300	3064	300	3,064
Savage River State Forest	Garrett	344	3371	114	1171	458	4,542
Swallow Falls State Park	Garrett	264	2956	3203	41648	3,467	44,604
Patuxent River	Howard	72	748	49	583	121	1,331
Middle Patuxent	Howard	35	386	0	0	35	386
South Mountain State Park	Washington	239	1714	122	962	361	2,676
Total		**1,405**	**14,041**	**5,092**	**59,397**	**6,497**	**73,437**

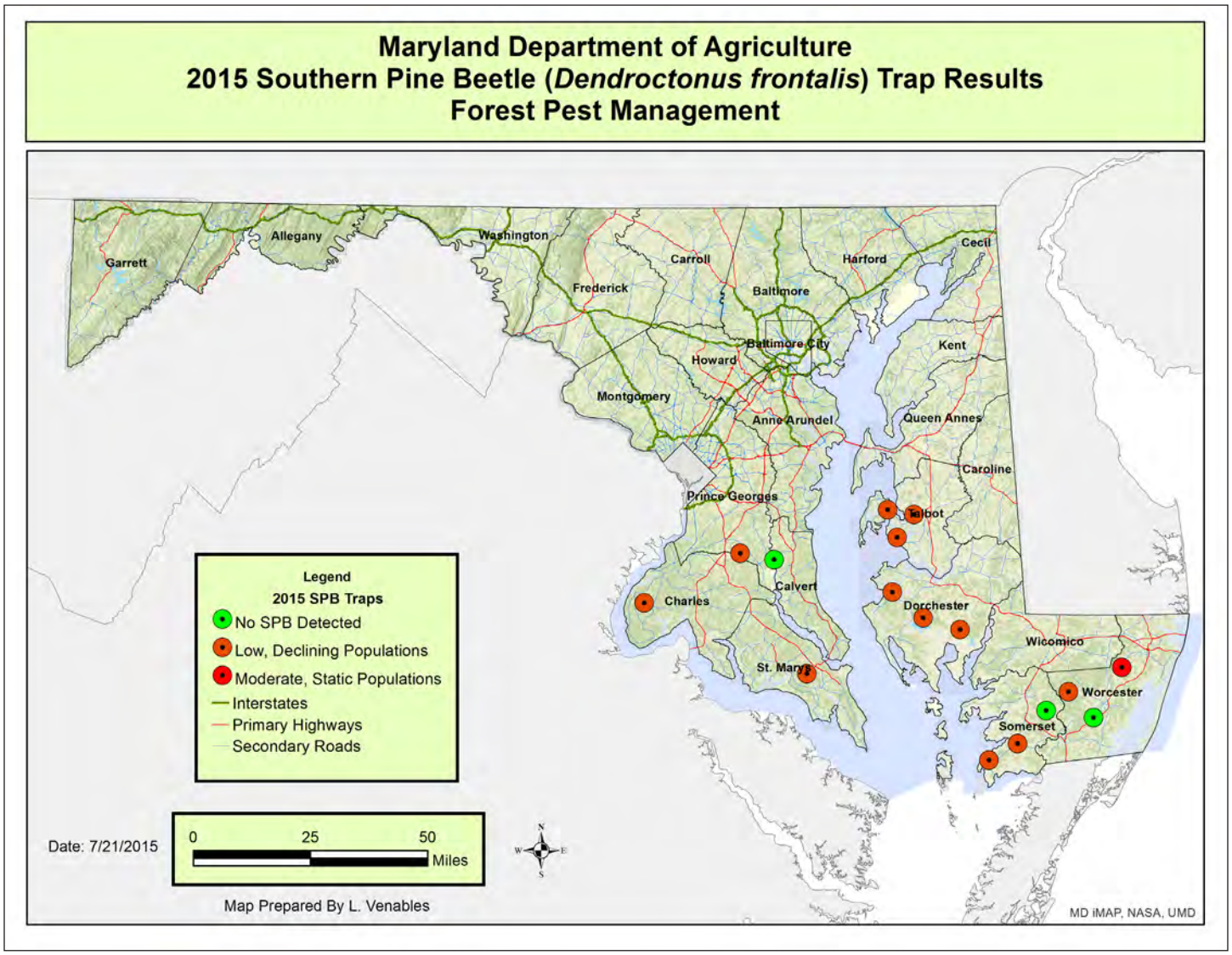
*DBH = the diameter of the tree trunk at 4.5 feet above the ground
** Owned By The Nature Conservancy
***Treatments done by Forest Pest Mangement and Maryland Conservation Corps (Department of Natural Resources)

Hemlock Woolly Adelgid Suppression Efficacy

Twenty-four hemlock stands have been evaluated for efficacy of HWA treatments with imidacloprid between 2005 and 2015. As of July 21, 2015, treated trees averaged an 83 percent reduction in HWA populations when measured 1 year post treatment; non-treated trees averaged a 34 percent reduction in HWA populations when measured over the same time period. Measurements were based on 3 to 10 treated hemlock trees and 3 to 10 untreated hemlock trees per site with HWA counted on two to four 30-cm branch tips per tree.

Southern Pine Beetle

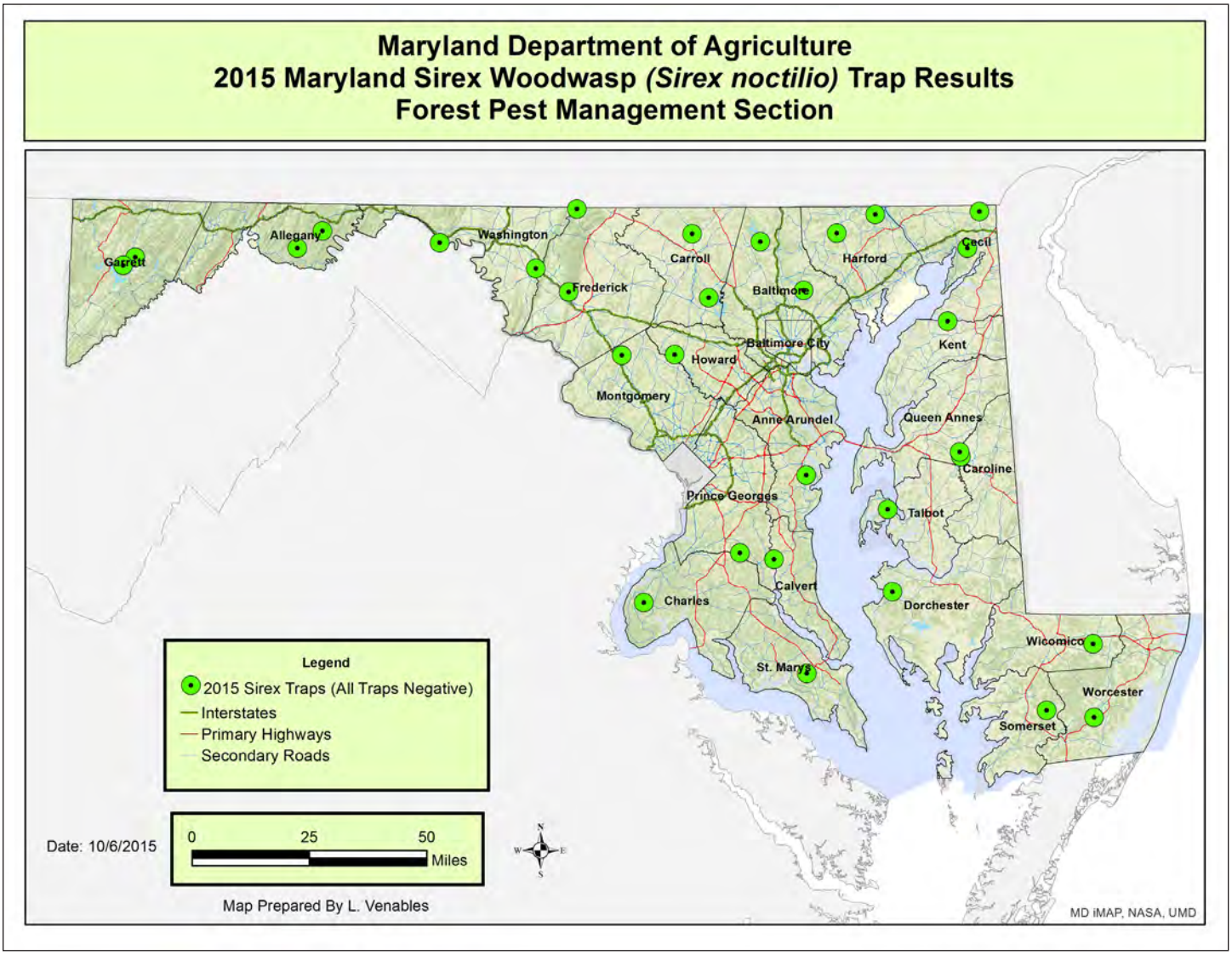
The southern pine beetle (SPB) is one of the most destructive insect pests of pines. Maryland is at the northern edge of its range, and this pest is commonly found on the lower Eastern Shore and in southern Maryland. Since 1989, Maryland has participated in a multistate SPB survey throughout the Southern United States using pheromone-baited traps. Populations have been below outbreak level since 1994. Trap data indicated that SPB numbers would be low to moderate in 2015. This year, however, an outbreak of SPB occurred in Dorchester County that resulted in 135.5 acres of dead loblolly pine.



MDA 2015 southern pine beetle trap results.

Sirex noctilio (Woodwasp)

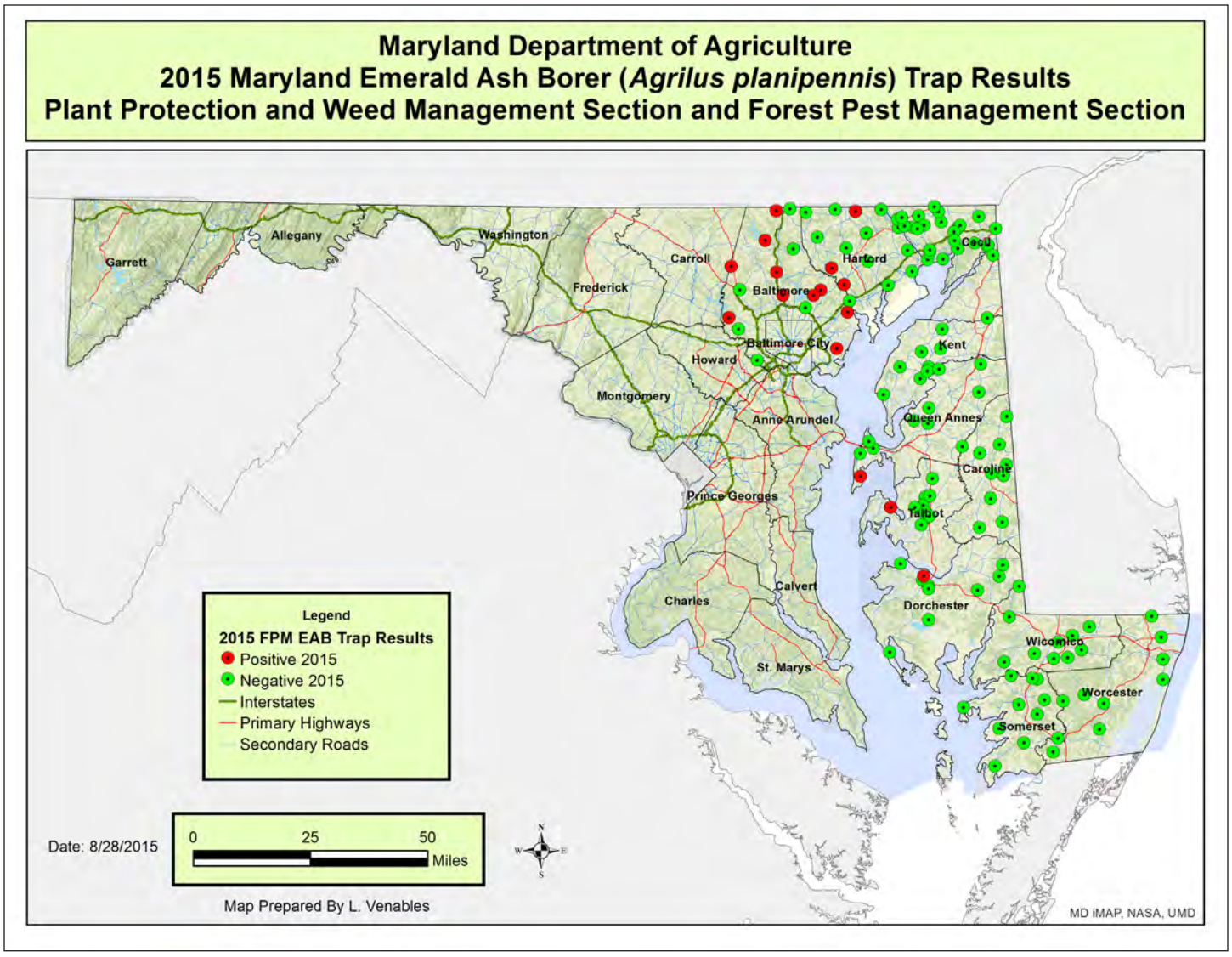
Sirex woodwasp has been the most common species of exotic woodwasp detected at United States ports-of-entry associated with solid wood packing materials. Recent detections of this woodwasp outside of port areas in the United States have raised concerns because this insect has the potential to cause significant mortality of pines. The Sirex woodwasp has not been detected in Maryland but is known to be in Pennsylvania. To detect this insect, MDA placed two traps per county in the northern tier counties and one trap for all other counties, for a total of 30 traps in pine woods. All traps were negative during FY2015.



MDA 2015 Sirex woodwasp trap results.

Emerald Ash Borer

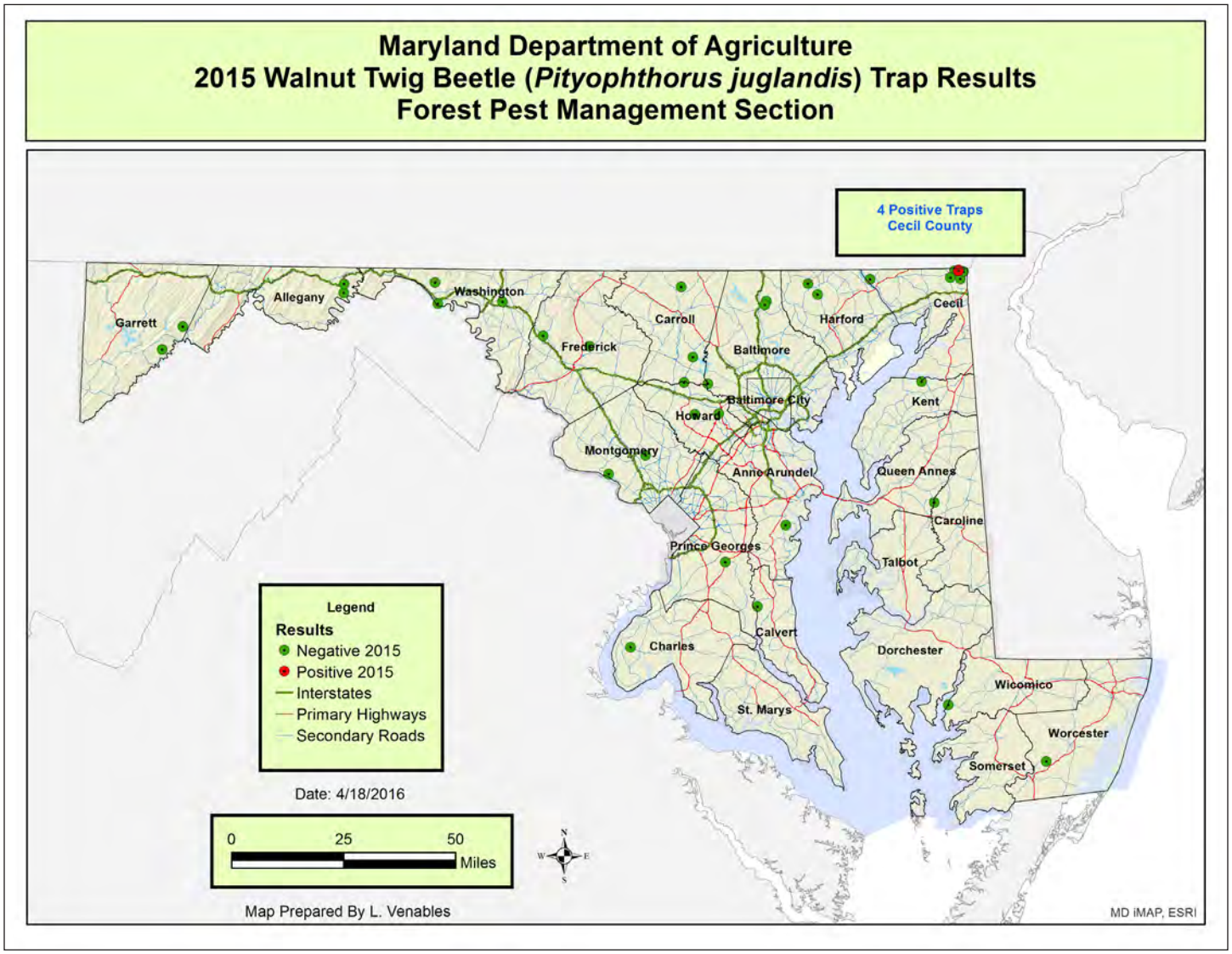
In conjunction with the MDA Plant Protection Section, MDA Forest Pest Management (FPM) put up 187 emerald ash borer (EAB) purple traps in the quarantined counties of Maryland. MDA FPM traps picked up new EAB finds in Baltimore and Harford Counties. The Plant Protection Section also collected EAB from traps in Queen Anne's, Talbot, and Dorchester Counties. These were the first positive finds on the Eastern Shore of Maryland. The EAB quarantine has been revised to include the entire State of Maryland.



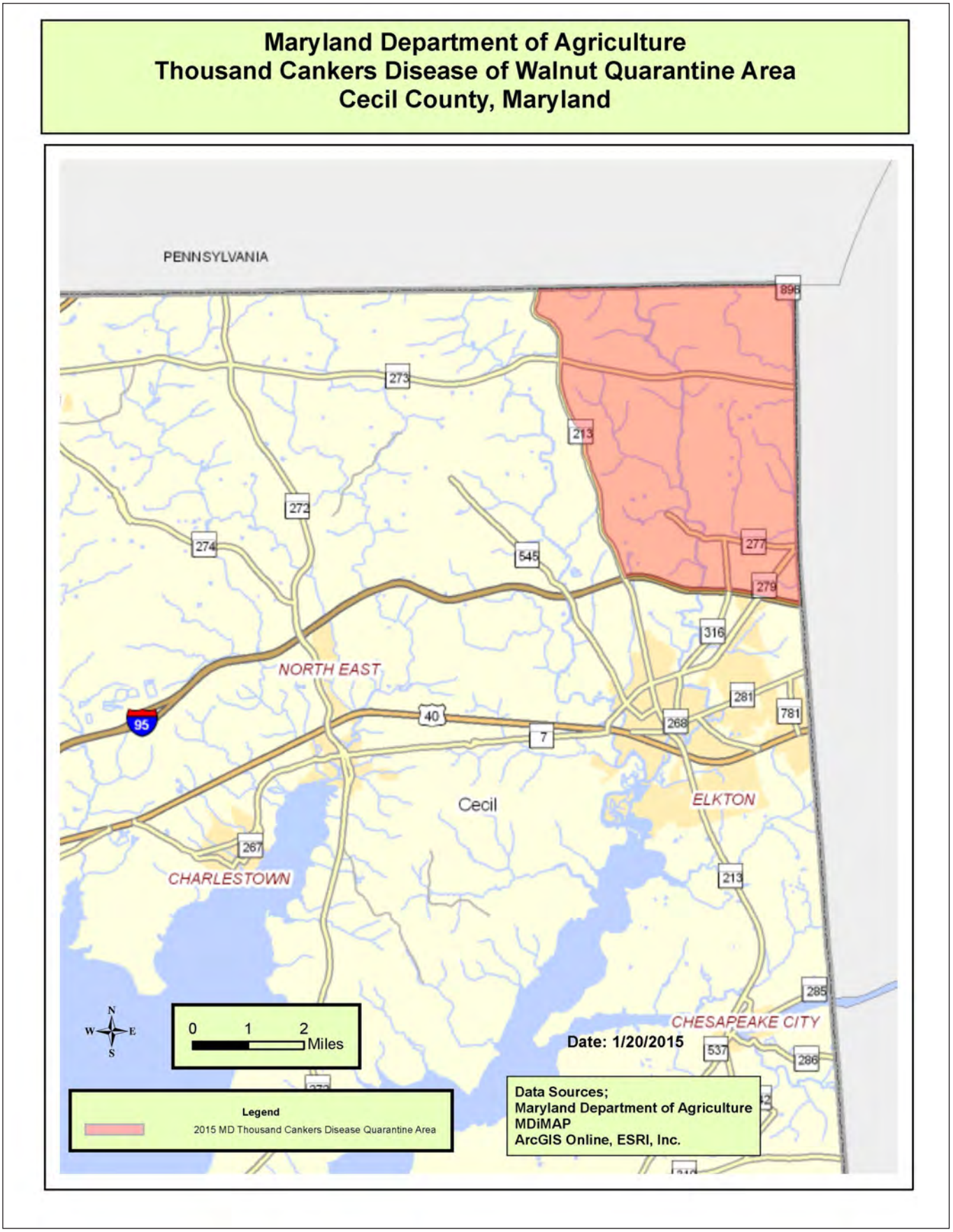
MDA 2015 emerald ash borer trap results.

Thousand Cankers Disease of Black Walnut and Walnut Twig Beetle

Eastern black walnuts planted in the Western United States have experienced dieback and mortality. The walnut twig beetle (WTB) spreads thousand cankers disease (TCD). An infested tree usually dies within 3 years of visible symptoms in the Western U.S. This beetle and disease had not been reported in the natural range of the eastern black walnut until they were discovered in Tennessee in 2010. Since then, TCD has been found in several States. Maryland, along with other Mid-Atlantic States, started surveying for this disease in 2011. Walnut twig beetle was detected in Maryland in 2013. Thousand cankers disease was confirmed in October 2014. The northeastern corner of Cecil County has been quarantined. Thirty-three traps baited with a pheromone for the WTB were set statewide to detect new infestations. None of these traps have been positive. Ten traps have been set at the positive detection area in an attempt to delineate the population. Specimens from the 2015 trap collection have not been completely identified. So far, the only positive traps for walnut twig beetle are the original positive tree and trap(s) within a few hundred feet of the original positive tree.



MDA 2015 walnut twig beetle trap results.



MDA thousand cankers disease of walnut quarantine area in Cecil County, Maryland.

Bacterial Leaf Scorch

Bacterial leaf scorch was prevalent all through the State this year. It was observed not only on ornamental trees but throughout Maryland in forested areas. This disease was less severe this year than last.

Beech Bark Disease

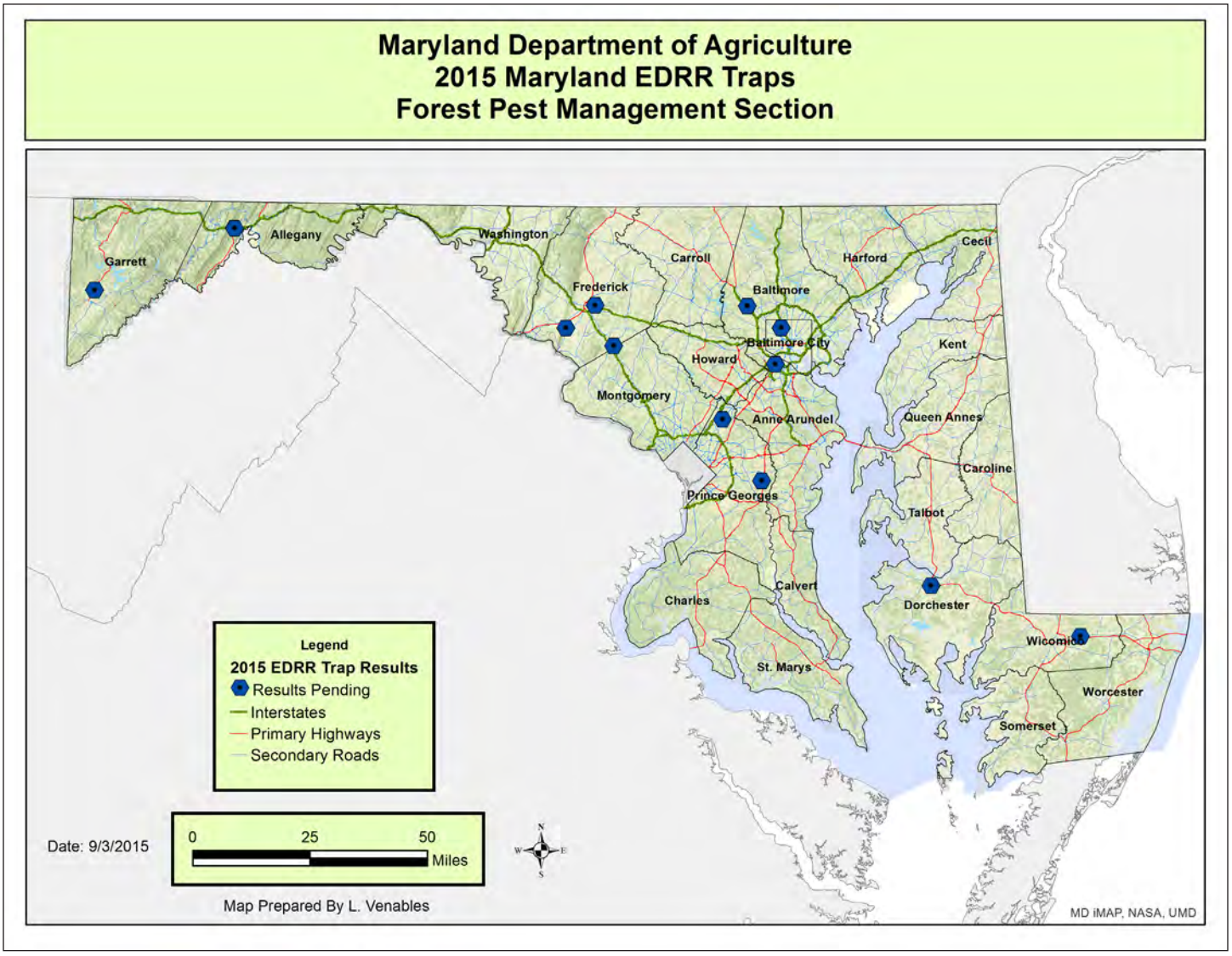
Beech bark disease has been found only in Garrett County. There are 154,473 acres of infested forest in Garrett County. Three permanent beech bark disease monitoring sites were set up in 2013.

Early Detection Rapid Response (EDRR)

We added the Exotic Bark Beetle Early Detection and Rapid Response to our surveys in 2015. MDA FPM participates in this activity every 4 years. As of December 2015, no new exotic Scolytines have been identified. The collected specimens were sent to be identified; a summary of the results is below.

Early Detection Rapid Response – 2015 Maryland Survey Results

Trap ID	County	Number of species trapped	Count
MD01	**Allegany**	34	363
MD02	**Garrett**	28	900
MD03	**Frederick**	30	1,501
MD04	**Frederick**	23	740
MD05	**Frederick**	28	999
MD06	**Baltimore**	22	650
MD07	**Baltimore**	37	945
MD08	**Baltimore**	33	580
MD09	**Prince George's**	28	971
MD10	**Prince George's**	29	416
MD11	**Dorchester**	24	1,073
MD12	**Wicomico**	21	1,989



MDA 2015 Early Detection Rapid Response traps (results pending).

Reference

Land Cover Map:

Jin, S.; Yang, L.; Danielson, P.; Homer, C.; Fry, J.; Xian, G. 2013. A comprehensive change detection method for updating the National Land Cover Database to circa 2011. Remote Sensing of Environment, 132: 159 – 175. http://www.sciencedirect.com/science/article/pii/S0034425713000242. (1 March 2016).

Forest Land Ownership:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service update of the 2010 RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 2. http://www.fs.fed.us/sites/default/files/media/types/publication/field_pdf/GTR-WO-91.pdf. (1 March 2016).

Net Volume of Growing Stock on Timberland by Species:

Oswalt, Sonja N.; Smith, W. Brad; Miles, Patrick D.; Pugh, Scott A. 2014. Forest resources of the United States, 2012: a technical document supporting the Forest Service update of the 2010 RPA Assessment. Gen. Tech. Rep. WO–91. Washington, DC: U.S. Department of Agriculture, Forest Service, Washington Office. Table 23 & 24. http://www.fs.fed.us/sites/default/files/media/types/publication/field_pdf/GTR-WO-91.pdf. (1 March 2016).

Forest Health Programs

State forestry agencies work in partnership with the U.S. Forest Service to monitor forest conditions and trends in their State and respond to pest outbreaks to protect the forest resource.

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